**K-5 Math Lesson Plan**

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| **Teacher:** | | | **Grade:**  **5th** | | | **Date(s)**:  **Day 1** |
| **Unit Title:**  **Operations with Whole Numbers and Decimals** | | | | **Corresponding Unit Task:**  **Unit 2 Task 1** | | |
| **Essential Question(s): 1. What strategies do I need to use to be able to complete a Pre-Assessment with multi-digit multiplication and division problems?** | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher: Pre-Assessment, Dry Erase Boards and Markers, Rules for *Math Challenge*** | | **Student: Pre-Assessment, Dry Erase and Markers** | | | **multiplication/multiply, division/divide**  **products, quotients, dividends, rectangular arrays**  **area models, equations** | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  **5.NBT.5**  **Number and Operations in Base Ten-** *Perform operations with multi-digit whole numbers and with decimals to hundredths.*  **5.NBT.6**  **Number and Operations in Base Ten-** *Perform operations with multi-digit whole numbers and with decimals to hundredths***.** | | | | | |
| **I Can Statement(s): 1. I can solve one digit by one digit multiplication problems. 2. I can solve two- digit by one- digit multiplication problems. 3. I can solve two- digit by two- digit multiplication problems. 4. I can solve three- digit by two- digit multiplication problems. 5. I can solve two- digit by one digit division problems. 6. I can solve three and four- digit problems by one and two- digit division problems.** | | | | | |
| **Activating Strategy/Hook: The teacher and students will play** [**http://www.fun4thebrain.com/multiplication/deepdivemult.html**](http://www.fun4thebrain.com/multiplication/deepdivemult.html) **on two different classroom computers after being split into two equal teams. The team that answers 10 problems correct first by walking up to the computer to answer the problem, WINS!** | | | | | |
| **Teacher Directed: The teacher will give the Pre-Assessment first. Then they will *Math Challenge* on the board. *See the Rules/ Instructions at the bottom of the page.*** | | | | | |
| **Guided Practice: The teacher will go over the directions to the *Math Challenge* gameand model how the game is played.** | | | | | |
| **Independent Practice: Pre-Assessment from** [**Unit 2 Pre-Assessment.docx**](file:///J:\Common%20Core%20Lesson%20Plans\Unit%202%20Pre-Assessment.docx) | | | | | |
| **Closing/Summarizing Strategy: Then the students will create either a (x or ÷) word problem in their Math Journals. The students are to first answer the problem themselves and then the next day switch Math Journals with a classmate to answer their problems. After solving each other’s problems, the students are to walk each other through how they solved each of the problems. (Teachers need to closely monitor who the student’s are trading with and make sure those who are struggling aren’t getting frustrated trying to do a three and four- digit problems by one and two- digit division problems.)** | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension** | | | **Intervention** | | | **Language Development** |
| * **Use a variety of online sources/ websites to extend the student’s thinking.** | | | * **Use a variety of online sources/ websites to intervene the student’s thinking.** * **Pair-up with a buddy to work more on the skills worked on in Tasks 1-3.** * **Use other teachers, parents, peers or tutors to assist students with using a variety of the different x and ÷ strategies.** | | | * **Use a variety of online sources/ websites to intervene and enhance the student’s thinking.** * **Pair-up with the teacher to work more on the skills worked on in Tasks 1-3.** * **Use flash cards or other manipulatives to assist the students.** * **Use other teachers, parents, peers or tutors to assist students with using a variety of the different x and ÷ strategies.** |
| **Assessment(s): See above in the Independent Practice section.** | | | | | | |
| **Teacher Reflection:** **The teacher will use the Pre-Assessment to help drive their instruction in their Guided Math groups and need for remediation.** | | | | | | |

**Math Challenge Rules/ Instructions**

* **Split the class into two teams of pretty equal ability (if possible).**
* **Have each team choose a marker and player to participate first.**
* **The first players will come up to the board with the marker and turn “away” from the board.**
* **The teacher will then write the same problem on the board for both teams. (A variety of multi- leveled multiplication and Division (later on) problems to assess the students learning).**
* **The teacher will say “go” and the students will turn around quickly, take the caps off of their markers and complete the problems. If neither team gets it correct after a certain period of time, then no points are awarded. To avoid “We tied!” statements, let the students know up front that we are the “Judge, Jury, Referee, etc.” for this game.**
* **The team that gets 5 problems correct first wins. (This number can be altered. This game is also great for class discussions about sportsmanship, perseverance, teamwork and positive thinking.**

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| **Teacher:** **Harmon/Reynolds** | | | **Grade: 5** | | | **Date(s)**: August 2012 Math Class |
| **Unit Title: Unit 2-Operations with Whole Numbers and Decimals. Day Two (Multi single digits)** | | | | **Corresponding Unit Task: Lessons Prior to “Our School’s Food Drive Collection Sheet”** | | |
| **Essential Question(s):**  How do I use multiplication strategies to solve problems with large quantities? | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher:**   * Textbook * Grid paper * Ruler * Center Activity 3-4 | | **Student:**   * Textbook * Grid paper * Ruler * Center Activity 3-4 * Journal * Pencil | | | Multiplication, multiply, products, rectangular arrays, digit. | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  **5.NBT.5**  Fluently multiply multi-digit whole numbers using the standard algorithm. | | | | | |
| **I Can Statement(s):**  -I can use the standard algorithm to multiply.  -I can fluently multiply multi-digit numbers using the standard algorithm. | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  Students will play the game “Beat The Teacher.” You will use a 100 problem basic multiplication fact paper 0-5. Give the students 3 minutes and see who can beat the teacher.  To record results students will need a sheet with 100’s flats on them. Each day the game is over they will check and record their results. They will shade in the number correct on the flat, record the fraction, percent, decimal, and the ratio the duration of the unit. | | | | | |
| **Teacher Directed: (This comes from the Envisions math Topic 3 Lesson 4 pg. 64B)**  Pose the problem:   * Suppose the school cafeteria orders 3 cases of milk. Each case contains 28 cartons of milk. How many cartons of milk are ordered? Use what you know about the meaning of multiplication to solve this problem any way you choose. * Allow a few students to share their answers.   Use Drawings:   * Have students use a s straightedge to draw a 3 by 28 rectangle on the grid paper. * How can you find the area of the rectangle? * Separate the rectangle in to two parts: a 3 x 8 part and a 3 x 20 part. * How can multiplication represent the areas of these parts? (3x8 and 3x20) * Use mental math to find these products (24 and 60) * How can you use the partial products to find the area of the large rectangle? (add the products) * What is the area? (84) * So, 84 cartons of milk were ordered.   Quick Check:   * Have students work in pairs * Write these multiplication sentences on the board: 4 x 36 and 5 x 17 * Draw an area model for each multiplication sentence. * Use your model to follow the steps we just used to find partial products and the total product. | | | | | |
| **Guided Practice:**  A theater has 5 sections with 347 seats in each section. What is the total number of seats in the theater?  Step 1: Practice problem solving strategies  Step 2: Set up the problem vertically  Step 3: Multiply the ones and regroup if necessary  Step 4: Multiply the tens and add any extra tens. Regroup if necessary.  Step 5: Multiply the hundreds and add any extra hundreds. Regroup if necessary.  Step 6: Circle and label your final answer  More guided practice pg. 65 1-4. (Pay particular attention to question 3)  Discuss the answers and check for understanding of the process. | | | | | |
| **Independent Practice:**  Students will complete textbook page 65 numbers 5-29 maximum of 10 in their math journals. (Be sure to assign problems with 2 digit x 1 digit problems as well)  Also, students can also complete textbook page 66 numbers 30, 32, 34, and 36 in their math journals as well.  Teacher needs to circulate the room to make sure that students are showing their work. | | | | | |
| **Closing/Summarizing Strategy:**  There are 89 fifth grade students and each student takes 3 tests in a week. Each test is front and back. How many tests does 1 teacher have to grade over the weekend? | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension** | | | **Intervention** | | | **Language Development** |
| Center activity 3-4. | | | Reteaching worksheet pg. 50. | | | Use graph paper to help students properly align their multiplication problems to see common errors. |
| **Assessment(s):**  Homework: Blue practice workbook pg. 51. | | | | | | |
| **Teacher Reflection:** (Next steps?) | | | | | | |

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| **Teacher: Ostria** | | | **Grade: 5** | | | | **Date(s)**: **Days 3 and 4** | |
| **Unit Title:**  Unit 2 – Operations with Whole Numbers and Decimals | | | | | **Corresponding Unit Task:**  Task 1 – Food Drive Collection Activity | | | |
| **Essential Question(s):**  How do I use multiplication strategies to solve problems with large quantities? | | | | | | | | |
| **Materials/Resources** | | | | | | **Essential Vocabulary** | | |
| **Teacher:**   * Computer * Make the Largest Product Game and materials * Make the Smallest Product Game and materials * Optional: Smart Board | | **Student:**   * Individual white boards * Dry erase marker – 1 per student * Board eraser (sock, tissue, etc.) * Pencil * Paper * Multiplication Methods worksheet – 1 per student * Calculator * Optional: Math Journal | | | | * Multiplication/multiply * Product * Equations * Factor | | |
| **Learning Experience** | | | | | | | | |
| **8 Mathematical Practices:**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  5.NBT.5  Fluently multiply multi-digit whole numbers using the standard  Algorithm  (Correlates to NCSCOS Math Objective 1.03) | | | | | | | |
| **I Can Statement(s):**   * I can use multiplication strategies to solve one digit by one digit multiplication problems. * I can use multiplication strategies to solve two digit by one digit multiplication problems. * I can use multiplication strategies to solve two digit by two digit multiplication problems. * I can use multiplication strategies to solve three digit by two digit multiplication problems. | | | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)   * Students will get out their individual small white boards, dry erase markers, and sock erasers. * Teacher will call out one digit by one digit problems for the student to solve. Students will write the answer on the white board and then show the answer when the teacher asks. * After several problems, the teacher may move to simple 2 digit by 1 digit problems to assess the students’ knowledge. | | | | | | | |
| **Teacher Directed:**  \*\*\* Teacher may choose to teach one or more of the following multiplication strategies.\*\*\*  Teacher will use the following links to teach the various multiplication strategies.  **Lattice Multiplication:**  <http://www.khanacademy.org/math/arithmetic/multiplication-division/v/lattice-multiplication>  **Standard Algorithm:**  [http://player.discoveryeducation.com/index.cfm?guidAssetId=72F8249C-9AC8-498B-9C4D-0DB14CD32939#](http://player.discoveryeducation.com/index.cfm?guidAssetId=72F8249C-9AC8-498B-9C4D-0DB14CD32939)  Lesson 5: Multiplying by Two Digit Number  Lesson 6: Multiplying by Two or More Digit Numbers  **Partial Products:**  <http://www.teachertube.com/viewVideo.php?video_id=104876>  <http://ellerbruch.nmu.edu/classes/cs255f04/cs255students/jbowerman/P10/PartialProduct>  <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&sqi=2&ved=0CIABEBYwBg&url=http%3A%2F%2Fwww.norman.k12.ok.us%2F155%2FMath%2Fpartial_products.ppt&ei=lTwQUJ2PM5K88wSb0IGQCw&usg=AFQjCNHSBmI-N_R4Sr_h2aTPQGeCXVEKeg&sig2=TesB001vVQKRlKdbh0N7rw> | | | | | | | |
| **Guided Practice:**  Students will get in partners and play the following games to practice multiplication of multi digit numbers.   * Make the Largest Product Game * Make the Smallest Product Game | | | | | | | |
| **Independent Practice:**   * Complete Multiplication Methods sheet | | | | | | | |
| **Closing/Summarizing Strategy:**   * 3-2-1 Activity * Students will write 3 new things they learned, 2 questions they still have, 1multiplication strategy they liked the most | | | | | | | |
| **Differentiation Strategies** | | | | | | | | |
| **Extension** | | | | **Intervention** | | | | **Language Development** |
| * Create own multi-digit problems and switch with a partner to solve * Create a power point presentation teaching the class one of the multiplication processes | | | | * Use numbers to the tenths or hundredths. * Pull a small group to reteach the concept * Use calculator | | | | * Use numbers to the tenths or hundredths. * Pull a small group to reteach the concept * Use calculator |
| **Assessment(s):**   * Student answers in Activating Strategy * Multiplication Methods sheet * Informal observations by teacher | | | | | | | | |
| **Teacher Reflection:** (Next steps?)   * What went well? * Student understandings/misconceptions * Specific notes about students’ thinking * What do I need to reteach/review tomorrow or in the future? * New ideas or changes for next time | | | | | | | | |

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Multiplication Methods Worksheet

Make sure to show all your work.

1. Complete the first three problems using the Lattice Method.

67x35= 73x28= 62x56=

1. Complete the next three problems using the Standard Multiplication Method.

49x72= 63x29= 71x39=

1. Complete the final three problems using the Partial Product Method.

16x21= 77x46= 39x62=

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